Claims

1. A method for modifying the acyltransferase (AT) domain in a first modular polyketide synthase (PKS) which method comprises:

excising by restriction enzyme reaction a first region encoding a first AT domain of a first PKS-encoding nucleic acid and inserting said excised first region into a region of a second PKS-encoding nucleic acid from which an AT domain-encoding region has been excised, to produce nucleic acid encoding a modified PKS.

2. The method of claim 1 wherein the first or second PKS is from *Saccharopolyspora erythraea.*

3. The method of claim 1 wherein the first or second PKS is from Streptomyces.

4. The method of claim 3 wherein the Streptomyces is *Streptomyces hygroscopicus.*

5. The method of claim 1 wherein the first PKS or second PKS is selected from the group consisting of erythromycin, rapamycin, avermectin, FK-506, and tylosin.

6. The method of claim 1 wherein the extender unit specificity of said first region is different from the extender unit specificity of the second region.

7. A method for modifying the AT domain in a first modular PKS which method comprises:

effecting *in vivo* recombination, wherein said recombination is from a donor plasmid comprising a first region encoding a first AT domain of a first PKS-encoding nucleic acid framed by a first pair of flanking sequences

into a recipient plasmid comprising a nucleic acid encoding a second PKS wherein in said recipient plasmid a second region encoding a second AT domain from a second PKS encoding nucleic acid is framed by a second pair of flanking sequences which are homologous to said first pair of flanking sequences, to produce nucleic acid encoding a modified PKS.

8. The method of claim 7 wherein said donor and recipient plasmids comprise different selectable markers.

9. The method of claim 7 wherein said donor plasmid is temperature sensitive.

10. The method of claim 7 wherein the first or second PKS is from *Saccharopolyspora erythraea*.

11. The method of claim 7 wherein the first or second PKS is from Streptomyces.

12. The method of claim 11 wherein the Streptomyces is *Streptomyces hygroscopicus*.

13. The method of claim 7 wherein the first PKS or second PKS is selected from the group consisting of erythromycin, rapamycin, avermectin, FK-506, and tylosin.

14. The method of claim 7 wherein the extender unit specificity of said first region is different from the extender unit specificity of the second region.

15. A recombinant vector which comprises the nucleic acid encoding said modified PKS produced by the method of claim 1.

16. A host cell transformed with the vector of claim 15.

17. The host cell of claim 16 wherein said cell is a bacterial cell.

18. The host cell of claim 17 wherein said bacterial cell is *E. coli*.

19. The host cell of claim 16 wherein said cell is a polyketide-producing organism.

20. The host cell of claim 19 wherein said polyketide-producing organism is a Streptomyces.

21. A method to produce a modified polyketide synthase which method comprises culturing the cells of claim 16.

22. A method to produce a polyketide which method comprises culturing the cells of claim 16.

23. A recombinant vector which comprises the nucleic acid encoding said modified PKS produced by the method of claim 7.

24. A host cell transformed with the vector of claim 23.

25. The host cell of claim 24 wherein said cell is a bacterial cell.

26. The host cell of claim 25 wherein said bacterial cell is *E. coli*.

27. The host cell of claim 24 wherein said cell is a polyketide-producing organism.

28. The host cell of claim 27 wherein said polyketide-producing organism is a Streptomyces.

29. A method to produce a modified polyketide synthase which method comprises culturing the cells of claim 24.

30. A method to produce a polyketide which method comprises culturing the cells of claim 24.